

ON RHYACIA FESTIVA, SCHIFF., SSP. CONFLUA, TR., AND SSP. THULEI, STGR.

By HANS BYTINSKI-SALZ, Ph.D., F.R.E.S. (Jerusalem).

Plate III.

I have always been much interested in what name should be applied to the Shetland specimens of *Rhyacia festiva*, Schiff., but not until recently have I been able to gather enough material from the Shetland Islands, Iceland, Scandinavia, and Great Britain to try to clear up this problem. I have now before me some 450 specimens of *Rh. festiva*, and I think I saw some thousands more in the larger collections of England and the Continent. Through the courtesy of Dr A. Schmidt, from Budapest, I had the opportunity to examine the original specimens of "*Apamea*" *conflua* from the Treitschke Collection, and during a visit at Dresden I saw also the series of original specimens on which Staudinger made his description of var. *thulei*.

Tutt (*British Noctuids*, Vol. II, p. 118-123, 1892) already gave a detailed description of the various forms of this species, adding a number of new names to the different variations in colour and design. As he also gave translations of the original description I may refer to them without citing them again.

There is still considerable doubt about the aspect of the type form of *Rhyacia festiva*, Schiff. Guenée (*Noctuelles*, Vol. V, p. 331) thinks that Hübner's figure (*Sammlung europäischer Schmetterlinge*, fig. 114) has perhaps been drawn after the actual specimens of Schiffermüller in the collection of the Theresianum Gymnasium at Vienna. Anyhow, as Hübner's figure is the first one which has been published after the very summary description of Schiffermüller, it can conveniently be used to determine the type form of *R. festiva*. Unfortunately, this dark reddish brown form with grey base is extremely rare in the collections, as Tutt already stated. Tutt only got one specimen from Perth which comes near to the type figure. I never saw any specimen which completely agrees with the type form. The nearest specimens I got are one ♂ from the Isle of Lewis, one ♂ from Lettonia, and a ♂ and ♀ from Vienna, but they are all much lighter red and with very little greyish shade at the base, the pair from Vienna almost none at all.

I am thinking, therefore, that Hübner's figure is not too good, and the colours are too strongly in contrast, the outer area being too bright red brown and the inner area too grey. This opinion is also confirmed by the figure of Hübner's var. *congener* (fig. 617), which also is coloured too deeply and too bright red. This brownish form without the black quadrate spots is very common on the Continent, but not so common in Great Britain, and is generally classified as *festiva*, Hbn. The darkest forms I got came from Lettonia and the moors of Southern Bavaria. My British specimens came from Aberdeen and Braemar.

Var. *subrufa*, Haw. seems to be a rather rare form. I have only 3 ♂♂, one ♂ from the environment of Berlin, one very beautiful ♂ with dark slate greyish base from Deep, Pomerania, and one ♂ from Aberdeen. Tutt mentions this form also from Pitcaple, Perth, and Warrington.

f. *pseudoconflua*, By.-S. (nom. nov. pro *conflua*, H. Sch., nec *conflua*, Tr.). The name of var. *conflua*, H. Sch. has to be altered as this form has nothing whatever to do with the form named by Treitschke. This is a very common form in the British Isles but is not so common on the Continent and is found in Continental collections generally under the name of *conflua*, Tr. which, however, is a mistake. Tutt compares this form with bright specimens of *R. rubi*, which is right if we compare it with English *rubi*, which in general are lighter than Continental ones. My European specimens came from Vienna and Berlin; the British from Moneymore, Perth, Pitcaple, Braemar, and Aberdeen. Tutt adds Chattenden and Rannoch.

Var. *rufo-virgata*, Tutt. This form is almost identical with the former one, but has the base of the forewing pale. It is common on the Continent and in Great Britain and is mostly included under the name *conflua*, Tr. or H. Sch. My Continental specimens came from Berlin; Amata, Lettonia; Dievenow and Deep, Pomerania, and Amsee, Bavaria; my British from Newton Abbot, Abbot's Wood, Epping Forest, Hampstead, Perthshire, and Inveran. Tutt adds Liverpool and Chattenden.

Var. *mendica*, Fabr. Very common. My Continental specimens are from Berlin, Chemnitz, Deep, Pomerania, the British from Moneymore, Newton Abbot, Isle of Lewis, Perth, Braemar, and Aberdeen. Tutt mentions also Hampstead, Farnboro, Chattenden, Shooter's Hill Wood, Carlisle, and Pitcaple.

The light yellow-ochreous forms without dark spots are almost entirely British, while the form with black quadrate spot (var. *primulae*, Esp.) seems to be prevalent on the Continent.

Var. *ignicola*, H. Sch. I have Continental specimens from Berlin, Oderberg, and Dievenow, and English ones from London, Epping Forest, Abbot's Wood, Folkestone. Tutt adds Hampstead, Chattenden, and Aberdeen.

Var. *ochrea-virgata*, Tutt. I have only specimens from Great Britain: London, Effingham, Abbot's Wood, and New Forest. Tutt adds Farnboro, Chattenden, Hampstead, and Shooter's Hill.

Var. *primulae*, Esp. is primarily a Continental form, where it is very common. My specimens are from Berlin; Stettin; Deep and Dievenow, Pomerania; Vienna, and the Ortler Mountains. British specimens are from Newton Abbot, Folkestone, Aberdeen, Braemar, and, according to Tutt, Chattenden, Carlisle, Perth, and Moray.

The grey and bluish grey forms described by Tutt from Aberdeen must be very rare on the Continent. Closs and Hannemann mention this form from Berlin, but I never saw a typical specimen from there. It is also mentioned for Poland by Romanistyn (*Fauna Lep. Poloniae*, 1930).

Of the var. *grisea*, Tutt, I have only a transitory specimen from Berlin, and of the var. *coerulea*, Tutt none. A few specimens with slate-grey suffusion and dark quadrate marks, but still of a rather yellowish colour, may however be classified as *trans. ad var. quadrata*, Tutt. Tutt quotes these greyish forms from Aberdeenshire, but all my Aberdeen specimens are decidedly reddish or yellowish forms, which seem there to be the prevalent colours.

Variations of the wing pattern are not very common. Only one aberration has been named:—

f. *fasciata*, Hannemann (*Int. Ent. Z.*, 11, p. 105) is a very rare form, described from Lake Werbellin near Berlin, with a sharply defined light postdiscal band. Some British specimens from Abbot's Wood, Money-more, and especially the ♂ type of var. *orkneyensis* (Pl. row D, fig. 7) show traces of a light band, but I never came across a specimen which showed this band sufficiently clear to be called *fasciata*, Hannem.

I think two more forms of *festiva* are worth naming:—

ab. **transversa**, ab. nov. Ground colour reddish or whitish ochreous; no dark quadrate marks present. Two very large transversal shades across the forewing. One middle shade between orbicular and reniform and another outside of the postmedial line. Hindwings normal.

Types: ♂ Cogne, Grajish Alps, VI, 1902; ♀ Abbot's Wood, England, 1899.

ab. **conjuncta**, ab. nov. Orbicular and reniform broadly conjoined at the base. This form seems to be very rare. I have only one specimen which otherwise belongs to the var. *ochrea-virgata*, Tutt.

Type: 1 ♀ Aberdeen, 1896.

In the Orkney Islands occurs a peculiar form which, without any doubt, belongs also to the ssp. *festiva*. My five specimens are very constant in coloration and only one shows variation in designs. The red ground colour, even redder than in *Rh. brunnea*, F., and the very distinct ochreous reniform, give to them an aspect very different from all other *festiva* forms. Unlike specimens from the Scottish Mainland, which in the average are somewhat smaller than English and Continental specimens, the Orkney specimens belong to the largest forms of *festiva*. I, therefore, think that the Orkney *festiva* is a good local variety which I am calling:—

Var. **orkneyensis**, var. nov. Span ♂♂ 37 mm., ♀♀ 34-36 mm. Ground colour a very rich "prussian red" to "cameo brown." The transverse lines slightly lighter, the submarginal line rather strongly contrasted ochreous. Reniform very distinct light ochraceous buff, also the orbicular circled with the same colour. Darker spots before and behind the orbicular. A small black dot at the end of the claviform. Hindwings as in *festiva*, sometimes a rather distinct light postmedial line (trans. ad f. *fasciata*, Hannem., plate, row D, fig. 7) present. Tip of the abdomen in the ♂♂ "rufous."

Cotypes: 2 ♂♂, 2 ♀♀ Orkney Islands, July 1895, ex coll. Dadd.

Var. *orkneyensis*, By.-S., ab. **depicta**, ab. nov.: as *orkneyensis*, but transverse lines obsolete, maculae of the ground colour, quadrate spots absent.

Type: ♂ Orkney Islands, July 1895, ex coll. Dadd.

Var. *conflua*, Treitschke. I examined the two type specimens from the Treitschke Collection in the Budapest Museum. They bear the numbers 1561 (♂) and 1562 (♀). Treitschke's description (*Die Schmetterlinge von Europa*, Vol. VI, pt. 1, p. 405) is very good. The ♂ spans 26 mm., the ♀ 28.5 mm. The term "forewing liver-coloured" should be applied to the colour of cooked liver and not to raw. After Ridgeway's the colour would be a pale dull "clay color," like some specimens of English f. *pseudoconflua*. In the ♂ the markings are not very indistinct, the marks before and behind the orbicular some-

what darker. The ♀ type is rather worn and this makes the markings even less distinct. The name "*conflua*" should not be interpreted as if there would be any confluency of markings!

Conflua, Tr. is a very peculiar form, and I never saw any European specimens which completely agree with it. Especially its small size is striking. Ordinary *festiva* span from 35-40 mm., while my smallest Scotch specimens still span 30 mm. (♂♂). The specimens nearest to *conflua* I saw are from Iceland, which agree well in the general coloration but are somewhat larger (29-30 mm., ♂♂). Warren's figure in *Seitz*, Pl. 8 K, is rather good though a little too greyish and probably drawn also after an Iceland specimen. I think Staudinger (*Iris*, IV, p. 266) is undoubtedly right in applying the name *conflua*, Tr. to the Iceland specimens.

Tutt already gave a comprehensive compilation of what is known of the occurrence of *conflua*, Tr. in the Silesian Mountains, but the question what kind of a form *conflua* really is remains still unsettled. H. Marschner, who undoubtedly has the largest knowledge of the Lepidoptera of the Riesengebirge of our times, writes in "*Die Grossschmetterlinge des Riesengebirges*" (*Ent. Rundschau*, Vol. 50, p. 38, 1933):— "*primulae*, Esp. belongs to the rarities of the district," and mentions neither *conflua* nor other *festiva* forms at all. According to Rössler and Standfuss this form does not breed true but always gives *festiva*-like offspring. Perhaps the series which Treitschke received were from collected larva and are a second generation raised under unfavourable conditions.

Ssp. *borealis*, Zett. is the Scandinavian race which comes nearest to var. *conflua*, Tr. It occurs only in northern Sweden, Norway, and Finland, while in the south still typical *festiva* forms occur. Ssp. *borealis*, Zett. is somewhat larger than *conflua*. My specimens came from Northern Norway, Lapponia, and Finlandia, and span from 32-34 mm.; they are darker than *conflua* and suffused with grey. The typical form *borealis*, Zett., with the black marks before and behind the orbicular, seems to be rarer than the f. *diducta*, Zett. I have of this form only one ♂ from Bossekopp, Norway, while the form without the marks = f. *diducta*, Zett. is represented in large series from Norway, Swedish Lappland, and Finland. Corti and Draudt (*Seitz Suppl.*, Vol. II, p. 76) describe another form—f. *disparata*, from Lappland which is dark violet with bright reddish-yellow tip to the abdomen. It is unknown to me. The var. *obsoleta*, Tutt (p. 123) belongs to ssp. *thulei*, Stgr.

Ssp. *thulei*, Stgr. The first one who started the confusion was Weir in 1884 (*Entomologist*, 17, p. 2), who called the *festiva* from the Shetlands var. *conflua*, Tr. But Staudinger put things right already in 1891 (*Iris*, IV, p. 266), calling the Shetland form of *festiva* a distinct local variety under the name of var. *thulei*, Stgr. and separating it from *conflua*, Tr. English authors, such as Newman and Tutt, keep the name *conflua* for the Shetland specimens. Hampson (*Cat. Phal.*, Vol. IV, 491) cites *thulei* as a separate form, but Warren (*Seitz*, Vol. II, p. 40) attributing to *conflua*, Tr. the value of a subspecies, and giving the following range of distribution:—Iceland, Shetlands, and Lappland, puts var. *thulei*, Stgr. again into synonymy. Culot (*Noctuelles*, Vol. I, p. 49) again separates *thulei* from *conflua*, Tr. but gives the entirely wrong distribution: "Boreal" England and Iceland. His

specimen, pictured on plate 7, fig. 18, undoubtedly came from the Shetlands.

Tutt (*l.c.*, p. 115) already points out that the var. *thulei*, Stgr. (his *conflua*, Tr.) occurs in Great Britain only in the Shetland Islands and not in England, Ireland, Scotland, or the surrounding Islands as, for example, the Orkneys. All specimens from Scotland, though sometimes as small as Shetland specimens, are undoubtedly true *festiva* forms.

I do not need here to go into a detailed description of the differences between *thulei* and *festiva* as this has already been done by Staudinger (1891) and Tutt (1892). Ssp. *thulei* is always much smaller—my specimens span from 29-35 mm. In general it is somewhat larger than var. *conflua*, Tr. and never reaches the size of large *festiva* specimens (40 mm.). The shape of the forewing is decidedly narrower than in all other *festiva* forms, with the apex more pointed.

Ssp. *thulei*, Stgr. varies as much as *festiva*, Schiff., but in an entirely different way. While in *festiva* the lighter red and ochreous forms prevail, these are almost absent in *thulei*. On the other hand, *thulei* is chiefly represented in dark red-brown, dull brown, or even blackish forms which are entirely absent in *festiva*. For comparative reasons it will be necessary to classify the colour forms of *thulei* in the same manner as Tutt did for *festiva*. We will consider the following forms which all came from the Shetland Islands (Mainland or Unst) and which were collected by McArthur 1907, Newman 1912, and Reid 1895.

- A. Ground colour ochreous-yellow.
 1. Without dark quadrate spots: not represented in my material.
 2. With dark quadrate spots: f. *primuloides*.
- B. Ground colour bright chestnut-red.
 1. Without dark quadrate spots: f. *rufobsoleta*.
 2. With dark quadrate spots: f. *hethlandica*.
- C. Ground colour dull liver-brown.
 1. Without dark quadrate spots: var. *obsoleta*, Tutt.
 2. With dark quadrate spots but without lighter reniform and transverse lines: ssp. *thulei*, Stgr.
 3. As 2, but with light reniform: f. *maculata*.
 4. As 2, but with light reniform and light transverse lines: f. *glabrina*.
- D. Ground colour purplish-black.
 1. Without black quadrate spots: not represented in my material.
 2. With black quadrate spots: f. *rufonigra*.
- E. Ground colour dull blackish-brown.
 1. Without black quadrate spots: f. *unicolor*.
 2. With black quadrate spots: f. *nigra*.

f. **primuloides**, f. nov. Ground colour yellow-ochreous, but with a duller shade as in *primulae*. Designs less conspicuous and not so reddish. Spots before and behind the orbicular black. This form may be considered a very light f. *thulei*, Stgr.

Cotypes: 5 ♂, 1 ♀ from Unst.

f. **rufobsoleta**, f. nov. Ground colour bright red chestnut-brown; base middle shade and marginal area sometimes darker. In most specimens lighter transverse lines present; reniform of the same colour as the ground, rarely somewhat lighter. No black marks present.

Cotypes: 14 ♂, 5 ♀ "Shetlands" (Newman).

f. **hethlandica**, f. nov. This is the same form but with dark marks before and behind the orbicular. The reniform and sometimes also the orbicular are often lighter than the ground colour.

Cotypes: 29 ♂, 11 ♀ "Shetlands," Mainland and Unst.

f. *obsoleta*, Tutt. Ground colour a dull liver-brown, the transverse lines and rarely the reniform somewhat lighter. I have 17 ♂, 6 ♀ from "Shetlands" and Unst.

f. *thulei*, Stgr. As above but with the black markings before and behind the orbicular. This is the form described by Staudinger (*Iris*, IV, p. 266) and is also very well represented in the original series of Staudinger in Dresden. The transverse lines are in general obliterated or only present in the marginal area. This is the most common form in my material: 35 ♂, 17 ♀ from "Shetlands," Mainland and Unst.

f. *maculata*, f. nov. As f. *thulei* Stgr., but the orbicular surrounded with light ochraceous and the reniform entirely ochreous. Submarginal line in the ♂ obsolete, in the ♀ rather distinct.

Types: ♂, ♀ "Shetlands."

f. *glabrina*, f. nov. The most beautiful form of all. Ground colour as in *thulei*. Basal line, ante- and postmedial lines light ochreous, very distinct. Submarginal line and marginal area ochreous with dark longitudinal streaks along the veins. Fringes dark. Reniform and orbicular light ochreous, the latter with darker centre. End of the claviform distinct black. Resembles somewhat *Conistra vaccinii*, f. *glabroides*, Fuchs.

Cotypes: 8 ♂, 5 ♀ "Shetlands."

f. *rufonigra*, f. nov. Ground colour a very dark "chocolate;" surroundings of the orbicular, reniform and marginal area slightly lighter. Black marks before and behind the orbicular. This is the darkest f. *hethlandica* in which the forewing is entirely suffused with black.

Type: 1 ♀ Mainland (Shetlands).

f. *unicolor*, f. nov. Ground colour a very dark "sepia." All lines slightly lighter. Maculae obsolete. Black spots absent.

Cotypes: 2 ♂ Unst.

f. *nigra*, f. nov. Ground colour an almost black "sepia." Maculae very slightly lighter. Spots before and behind the orbicular and end of the claviform black, but not very contrasty.

Type: 1 ♀ "Shetlands."

f. *unicolor* and f. *nigra* are the extreme dark forms of f. *obsoleta*, Tutt, and f. *thulei*, Stgr., in which the brown colour is entirely suffused with black.

Variations of the wing pattern are rather rare. Occasionally the ab. *conjuncta*, By.-S., with the orbicular and reniform conjoined at the base, is found. Another striking aberration is:—

ab. *nigrostriata*, ab. nov. Colour and markings as f. *hethlandica* but with black streaks on the veins. Vein 1 black almost to the base, veins 2-4 black to the cell, veins 5-9 only to the submarginal line.

Type: 1 ♀ "Shetlands."

In the following part I will try to give a statistical account of the occurrence of the different forms of *Rh. festiva* in Great Britain, on the Continent, and in the Shetlands. I am leaving out the var. *conflua* from Iceland and ssp. *borealis*, as these show a too small range of variation to be treated statistically. Of course I am aware that the division of *festiva*-forms in British and Continental specimens is rather unsatisfactory, as neither Great Britain nor the Continent represent uniform populations. It is well known to British collectors how much

different are the populations of the London District and Aberdeenshire in their range of variation and general aspect, though, as Reid (*Tutt*, p. 115) states, all Scotch forms may also occasionally occur in Kent. The same is also the case on the Continent, if we compare, for example, the populations of Pomerania with those of Berlin or the Alps. But, as my material is still too small to give a statistical survey of the different populations of one country, I have to confine myself to this rather crude division which, however, gives already some interesting results.

Another point which has to be considered in studying the following table is that the material tabulated has not been collected at random but consists of selected series taken by various collectors. But this means only that, while not too much stress should be laid on the actual percentage values, the rarer forms are represented in larger numbers than correspond to their actual frequency. But the range of variation of the different forms will remain the same in even much larger series collected at random.

General Coloration.	Named Form.	Great Britain.	Continent.	Shetland Islands.
Brownish or reddish-black.	f. <i>ntgra</i> , By.-S.	—	—	1
	f. <i>rufonigra</i> , By.-S.	—	—	1
	f. <i>unicolor</i> , By.-S.	—	—	2
Dull liver-brown.	f. <i>obsoleta</i> , Tutt.	—	—	23
	f. <i>thulei</i> , Stgr.	—	—	52
	f. <i>maculata</i> , By.-S.	—	—	2
	f. <i>glabrina</i> , By.-S.	—	—	13
Bright chestnut-brown.	f. <i>hethlandica</i> , By.-S.	—	—	40
	f. <i>rufobsoleta</i> , By.-S.	—	—	20
Bright prussian-red.	var. <i>orkneyensis</i> , By.-S.	4	—	—
	ab. <i>depicta</i> , By.-S.	1	—	—
Dull ochraceous reddish-brown	f. <i>festiva</i> , Schiff.	(1)	(3)	—
	f. <i>congener</i> , Hübn.	2	31	—
	f. <i>subrufa</i> , Haw.	1	2	—
Reddish-ochraceous.	f. <i>rufo-virgata</i> , Tutt.	30	23	—
	f. <i>pseudoconfluens</i> , By.-S.	17	5	—
	f. <i>mendica</i> , Fabr.	16	21	—
Pale yellow-ochraceous.	f. <i>ochrea-virgata</i> , Tutt.	31	—	—
	f. <i>ignicola</i> , H. Sch.	34	4	—
	f. <i>primulae</i> , Esp.	7	23	—
	f. <i>primuloides</i> , By.-S.	—	—	6
Greyish and bluish.	f. <i>grisea</i> , Tutt.	+	(1)+	—
	f. <i>coerulea</i> , Tutt.	+	+	—
	f. <i>quadrata</i> , Tutt.	+	(5)	—

Numbers in brackets indicate transitory specimens; += known from the country but not represented in my collection.

It will be noticed that I applied somewhat different terms for the general coloration, as did Tutt. In fact, the colours given by Tutt are seen more with the eye of an impressionistic painter than with that of a critical scientist. I am sure that "dark purplish or reddish-brown" specimens of *festiva* do not exist, though they may have sometimes a faint hue towards these colours. But a hue is not yet the actual colour observed with our eyes. I would call the colour of *festiva*, *congener* and *subrufa* a dull ochraceous reddish-brown, or after Ridgeway: tawny to mikado-brown.

From the tabulation above, the following points may be seen. Taking the general coloration, the middle shades are the more frequent ones, the light and dark shades the rarer ones. In *festiva*, the most common forms are reddish or yellowish-ochraceous, in ssp. *thulei*, those which are liver or chestnut-brown.

Ssp. *thulei* is without any doubt a distinct subspecies, as is also shown by its range of variation. Only the lightest form: *primuloides* agrees in colour somewhat with the *festiva* form, *primulae*, but has decidedly a duller shade. All other colour-forms are not represented in ssp. *festiva*.

Between the populations of Great Britain and the Continent (chiefly Germany incl. Austria) there seem to be some remarkable differences in the distribution of the different forms, though I do not think that one form is lacking entirely either here or there. The prevalent forms in Britain are: *rufo-virgata*, *pseudoconflua*, *mendica*, *ochrea-virgata* and *ignicola*. On the Continent they are: *congener*, *rufo-virgata*, *mendica* and *primulae*. f. *pseudoconflua*, *ochrea-virgata* and *ignicola* are much more common in Britain than on the Continent, while *congener* and *primulae*, which are common on the Continent, are decidedly rare in the British Islands. The greyish and bluish forms seem to be very rare both on the Continent and in Great Britain.

EXPLANATION OF THE PLATE.

Though great care was taken to represent the different shades of colour right, the photograph did not come out too well. For subjective observation the light forms with reddish tinge are pictured too dark. There also seems to be almost no difference between the bright chestnut-red forms and the almost black forms. The specimens A. 2-7, B. 8-9, C. 1-2, 5-6, and D. 7-9 should be somewhat lighter.

Rhyacia festiva, Schiff.

- A. 1. Near f. *festiva*, Schiff. ♂. Isle of Lewis.
 2. Near f. *festiva*, Schiff. ♀. St Amata, Lettonia.
 3. f. *primulae*, Esp. ♂. Berlin.
 4. f. *primulae*, Esp. ♀. Berlin.
 5. f. *ignicola*, Tutt. ♂. Aberdeen.
 6. f. *ignicola*, Tutt. ♀. Epping Forest.
 7. f. *pseudoconflua*, By.-S. ♂. Aberdeen.
 8. f. *pseudoconflua*, By.-S. ♀. Vienna.
- B. 1. v. *conflua*, Tr. ♂ Type. Riesengebirge, Germany.
 2. v. *conflua*, Tr. ♀ Type. Riesengebirge, Germany.
 3. v. *conflua*, Tr. ♂. Iceland.
 4. v. *conflua*, Tr. ♂. Iceland.
 5. v. *conflua*, Tr. ♂. Iceland.
 6. ssp. *thulei*, Stgr. ♂. Shetland Islands.
 7. ssp. *thulei*, Stgr. ♀. Shetland Islands.
 8. ssp. *thulei*, Stgr., f. *hethlandica*, By.-S. ♂ Cotype, Shetland Islands.
 9. ssp. *thulei*, Stgr., f. *hethlandica*, By.-S. ♀ Cotype, Shetland Islands.
- C. 1. ssp. *thulei*, Stgr., f. *primuloides*, By.-S. ♂ Cotype. Shetland Islands.
 2. ssp. *thulei*, Stgr., f. *primuloides*, By.-S. ♀ Cotype. Shetland Islands.
 3. ssp. *thulei*, Stgr., f. *glabroides*, By.-S. ♂ Cotype. Shetland Islands.
 4. ssp. *thulei*, Stgr., f. *glabroides*, By.-S. ♀ Cotype. Shetland Islands.
 5. ssp. *thulei*, Stgr., f. *rufobsoleta*, By.-S. ♂ Cotype. Shetland Islands.
 6. ssp. *thulei*, Stgr., f. *rufobsoleta*, By.-S. ♀ Cotype. Shetland Islands.
 7. ssp. *thulei*, Stgr., f. *unicolor*, By.-S. ♂ Cotype. Shetland Islands.
 8. ssp. *thulei*, Stgr., f. *unicolor*, By.-S. ♀ Cotype. Shetland Islands.

- D. 1. ssp. *thulei*, f. *rufonigra*, By.-S. ♀ Type. Shetland Islands.
2. ssp. *thulei*, f. *obsoleta*, Tutt. ♂. Shetland Islands.
3. ssp. *thulei*, f. *obsoleta*, Tutt. ♀. Shetland Islands.
4. ssp. *borealis*, Zett. ♂. Bossekopp, Norway.
5. ssp. *borealis*, Zett., f. *diducta*. ♂. Lampela, Lapponia.
6. ssp. *borealis*, Zett., f. *diducta*. ♀. Lampela, Lapponia.
7. var. *orkneyensis*, By.-S. ♂ Cotype. Orkney Islands.
8. var. *orkneyensis*, By.-S. ♀ Cotype. Orkney Islands.
9. var. *orkneyensis*, By.-S., f. *depicta*, By.-S. ♂ Type. Orkney Islands.

MICRAMBE AUBROOKI SP. N. (CRYPTOPHAGIDAE, COL.).

A BEETLE NEW TO SCIENCE.

By HORACE DONISTHORPE, F.Z.S., F.R.E.S., Etc.

Reddish brown, antennae and legs yellow, shining, clothed with rather long semi-decumbent light yellow hairs which are more numerous on the elytra. *Head* rather strongly and deeply but not closely punctured. *Thorax* transverse, considerably narrower than elytra, the callosities at anterior angles are shorter, and flatter, than in *vini* or *villosa*, and are not toothed; puncturation consisting of round, fairly deep, but not close, punctures. *Elytra* with similar puncturation to thorax, but the punctures are not quite so large. *Long.*—1.6 mm. It is a smaller species, more shining, not nearly so closely but more strongly punctured than either *vini* or *villosa*. It is also darker in colour and its hairs are a little longer, but more sparse, and the thorax is less transverse. It appears to be a very distinct little species; it is certainly not a known palaeartic one, and I have been unable to find a description to fit it.

Mr E. W. Aubrook, of the Hope Department, University Museum, Oxford, sent it to me to name. It was taken by Mr C. Jones at a Chrysanthemum Show at Manchester in November 1934. The type has been placed by Mr Aubrook in the National Collection at S. Kensington.

Entomological Department, British Museum
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ZELLER'S VERSUCH: MARCH 1839.

By T. BAINBRIGGE FLETCHER.

Just one hundred years ago, in March 1839, there appeared in Oken's *Isis* (Vol. XXXII, Heft 3, pp. 167-220) Zeller's "Versuch einer naturgemässen Eintheilung der Schaben" (an attempt at a natural arrangement of the Tineae), which laid the foundations of our present-day classification. Previous efforts, by Fabricius, Latreille, Hübner, Haworth, Treitschke, Stephens and others, to split up the old Linnaean concept of "Tinea" into smaller groups, had all been founded, more or less, on colour-characters, and Zeller's new arrangement represented a great advance as being founded more on structure. Unfortunately, Zeller's paper, published in a rather out-of-the-way medium, was little known to entomologists of the time and this volume of the *Isis* has now become so scarce as to be found in very few entomological libraries.